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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,020	07/07/2006	Iakovos Sigalas	19366	1036
23389 7590 06/23/2009 SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA SUITE 300 GARDEN CITY, NY 11530				
EXAMINER				
FERGUSON, LAWRENCE D				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
06/23/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,020

Applicant(s)

SIGALAS ET AL.

Examiner

Lawrence D. Ferguson

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 19-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/5508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Response to Request for Continued Examination

1. This action is in response to the Request for Continued Examination filed May 7, 2009. Claims 1 and 13 were amended and claim 21 was added rendering claims 1-21 pending.

Claim Rejections – 35 USC § 102(b)

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 9-13 and 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Fang et al. (U.S. 6,454,027).

Fang discloses a composite material comprising a plurality of granules (cores) formed from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride (PcBN) distributed within a matrix (column 2, line 66 through column 3, line 12, 21; column 4, lines 42-43) where the PCD and PcBN materials are ultra-hard materials, as in claims 1-3 and 11-13.

Concerning claim 1, the phrases, "consisting essentially of a plurality of cores of polycrystalline ultra hard material dispersed in a matrix" and "the matrix consisting essentially of a further polycrystalline ultra hard material of a grade or type which is different from that of the material of the cores" without further explanation or convincing argument does not materially define the claimed material and matrix over the teachings of Fang et al. The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355.

Concerning claims 4-5 and 10, the cores are formed of PCD and PcBN and the matrix is construed as being formed of PCD and PcBN material, as the matrix comprises PCD and PcBN material.

Concerning claims 6-7 and 19-20, the PCD granules have grain size in the range of from 1 to 50 microns (column 5, lines 40-43).

Concerning claim 9, the core and matrix are made from PCD material, where the core PCD material comprises a binder material such as Co, Ni, Fe (column 4, lines 42-45) where the matrix material comprises binder material further consisting of C, B, Cr, Si and Mn (column 3, lines 21-26).

Concerning claim 21, the matrix comprises materials such as nitrides, borides or carbides. In claim 21, the phrase, "sintered to themselves" introduces a process limitation to the product claim. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966. Further, process limitations are given little patentable weight in product claims.

Claim Rejections – 35 USC § 103(a)

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al. (U.S. 6,454,027).

Fang is relied upon for claim 1, as above. Fang does not explicitly disclose the PCD and PcBN materials differ in particle size. It would have been obvious to one of ordinary skill in the art for the PCD and PcBN materials to differ in particle size because Fang discloses a composite material comprising a plurality of granules (cores) formed from a mixture of polycrystalline diamond (PCD) and polycrystalline cubic boron nitride

(PcBN) (column 2, line 66 through column 3, line 12, 21) where Figure 1 shows the grain size (12) of the mixed material vary in size. The reference further discloses diamond particles can be granulated into a desired size (column 6, lines 33-34). Regarding the differing particle size of the materials, a recitation of a newly disclosed property does not distinguish over a reference disclosure of the article or composition claims. *General Electric v. Jewe Incandescent Lamp Co.*, 67 USPQ 155. *Titanium Metal Corp. v. Banner*, 227 USPQ 773.

Response to Arguments

6. Applicant's arguments of the rejection made under 35 U.S.C. 102(b) as being anticipated by Fang et al. (U.S. 6,454,027) have been considered but are unpersuasive.

Applicant argues Fang does not describe a composite consisting essentially of the cores and matrix material as claimed, where Fang always incorporates a ductile material, generally in the form of a cermet material. In claim 1, the phrases, "consisting essentially of a plurality of cores of polycrystalline ultra hard material dispersed in a matrix" and "the matrix consisting essentially of a further polycrystalline ultra hard material of a grade or type which is different from that of the material of the cores" without further explanation or convincing argument does not materially define the claimed material and matrix over the teachings of Fang et al. The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the

claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355.

Additionally, the cermet material is also used to form PCD material (column 3, lines 21-26, 33-40), which is claimed as a part of the composite material by Applicant. Because the cermet material comprises carbide, which is the same material as claimed in instant claim 21 as matrix material, it does not appear that the carbide cermet material of Fang would materially affect the basic and novel characteristics of the claimed invention.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is 571-272-1522. The examiner can normally be reached on Monday through Friday 9:00 AM – 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample, can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lawrence Ferguson/
Patent Examiner, Art Unit 1794

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794